

REMARKS/ARGUMENTS

Applicant has not cancelled, added, or amended any claims. Accordingly, claims 1, 2, and 4-25 are pending in the application, with claims 16-25 withdrawn and claims 1, 2, and 4-15 currently under examination. Applicant has amended the specification as suggested by the Examiner to incorporate language from originally filed claim 3 relating to the length of the amino acid sequence comprising at least a single Apo B binding site sequence as being from about 8-500 amino acid residues in length. Accordingly, no new matter has been added by way of amendment.

Reconsideration of the claims is respectfully requested in view of the following remarks. The Examiner's comments in the Office Action dated August 7, 2006 are addressed below in the order set forth therein.

The Rejection of Claims Under 35 U.S.C § 112, First Paragraph, Should Be Withdrawn

Response to Rejections for Lack of Written Description

Claims 1-2 and 4-14 have been rejected under 35 U.S.C. 112, first paragraph, as "containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention" (see page 3 of the Office Action dated August 7, 2006). This rejection is respectfully traversed for the reasons provided below.

As a preliminary matter, Applicants wish to address an aspect of the Examiner's rejection relating to her statement on page 3 of the Office Action dated August 7, 2006 that "the claims recite the open language 'comprising at least one peptide component', thus there's no upper limit." Because the remainder of the rejection fails to refer to any issue relating to this supposed lack of an upper limit, it is unclear whether the Examiner is relying on this aspect of the claim to support the present rejection. Applicants request clarification or withdrawal of the rejection with respect to this statement.

The Examiner states that there is inadequate written description about the structure for the peptide encompassed by the rejected claims, that these claims encompass a large variable genus of peptides, and that the specification fails to provide a representative number of species of the claimed genus. Applicants disagree.

With respect to the Examiner's statement that there is inadequate written description regarding the structure for the peptide component of the claims, the Federal Circuit has made it clear that sufficient written description requires simply the knowledge and level of skill in the art to permit one of skill to immediately envision the product claimed from the disclosure. *Purdue Pharma L.P. v. Faulding Inc.*, 230 F.3d 1320 1323, 56 USPQ2d 1481, 1483 (Fed. Cir. 2000) ("One skilled in the art must immediately discern the limitations at issue in the claims.") (emphasis added). In determining whether one of skill in the art would readily be able to envision the claimed invention, Applicants submit that the Examiner has not considered all of the limitations at issue in the present claims.

The present claims are directed to non-naturally occurring, receptor competent low density lipoprotein particles comprising a peptide component and a lipophilic substituent, the combination of which defines Applicants' invention. The claims define a number of structural and functional limitations for the peptide component of these lipoprotein particles. Important characteristics of the peptide component within the present claims are that the peptide component is covalently bonded to at least one lipophilic substituent, that this bonding occurs at the amino and/or carboxy terminus of the peptide, that the peptide component contains a binding site for an Apo B protein receptor, and that the peptide component is from 8 to 500 amino acid residues long. Such structural and functional limitations are described in detail in the specification. For example, pages 6 to 8 of the specification describe in detail lipophilic "anchors" and the location and manner of contacting the lipophilic substituent with the peptide component. Furthermore, there is ample discussion on pages 8 to 12 of the specification relating to the peptide component, explaining that the peptides must bind to the Apo B protein receptor and providing exemplary amino acid sequences for such peptides, particular amino acids associated with such binding activity, and conservative amino acid substitutions that may be

made to such sequences while retaining such binding activity. With respect to the structural and functional limitations described above, Applicants submit that the knowledge and level of skill in the art would allow a person of ordinary skill to envision the claimed lipoprotein particles in light of the present specification.

With respect to the Examiner's statements that the claims encompass a large variable genus of peptides and that the specification fails to provide a representative number of species of the claimed genus, Applicants respectfully direct the Examiner to the "Guidelines for Examination of Patent Applications Under 35 U.S.C. 112, ¶1, 'Written Description' Requirement" 66 Fed. Reg. 1099-1111 (January 5, 2001)(hereinafter "the Guidelines"). The Guidelines state that a genus may be described by "sufficient description of a representative number of species . . . or by disclosure of relevant, identifying characteristics, i.e. structure or other physical and/or chemical properties." *Id.* at 1106. A satisfactory disclosure of a "representative number" of species depends on whether one of skill in the art would recognize that the applicants were in possession of the necessary common attributes or features of the elements possessed by the members of the genus in view of the species disclosed. As described above, the present claims define a number of structural and functional limitations for the peptide component of the claimed lipoprotein particles, all of which are clearly described in the specification. Applicants therefore submit that one of skill in the art would recognize that Applicants were in possession of the necessary common attributes or features of the elements possessed by the genus of lipoprotein particles encompassed by the present claims.

In view of the remarks provided above, Applicants submit that the Examiner's rejection under 35 U.S.C. § 112, first paragraph (written description), has been overcome and should be withdrawn.

Response to Rejections for Lack of Enablement

Claims 1-2 and 4-14 have been rejected under 35 U.S.C. 112, first paragraph, "because the specification, while being enabling for the peptides set forth in SEQ ID NOS:3, 4, 5, 6, 7 and 9 does not reasonably provide enablement for any peptide component thereof having Apo B

binding site.” (see page 5 of the Office Action dated August 7, 2006). This rejection is respectfully traversed for the reasons provided below.

The present claims are directed to non-naturally occurring, receptor competent low density lipoprotein particles comprising a peptide component and a lipophilic substituent. Within these claims, the Examiner’s rejection focuses on enablement with respect to the peptide component of the claimed lipoprotein particles. The Examiner states that the rejected claims are not enabled because: 1) the quantity of experimentation required to determine the genus of peptides encompassed by the claims would be undue; 2) there is a lack of guidance regarding which amino acids within the peptide sequences encompassed by the claims may be modified while conserving the desired activity and such modifications are unpredictable; and 3) the working examples do not provide guidance with respect to the genus of peptides encompassed by the claims. Applicants disagree.

The test for enablement is whether one reasonably skilled in the art could make or use the invention based on Applicants’ disclosures coupled with information known in the art without undue experimentation. *United States v. Telectronics, Inc.*, 857 F.2d 778, 785, 8 USPQ2d 1217, 1223 (Fed. Cir. 1988). As stated by the Examiner, factors to be considered when determining whether there is sufficient evidence to support a determination that a disclosure does not satisfy the enablement requirement and whether any necessary experimentation is "undue" include, but are not limited to: 1) the breadth of the claims; 2) the nature of the invention; 3) the state of the prior art; 4) the level of one of ordinary skill; 5) the level of predictability in the art; 6) the amount of direction provided by the inventor; 7) the existence of working examples; and 8) the quantity of experimentation needed to make or use the invention based on the content of the disclosure. *In re Wands*, 858 F.2d 731, 737, 8 USPQ2d 1400, 1404 (Fed. Cir. 1988).

With respect to the Examiner’s statements regarding the amount of experimentation required to practice the claimed invention, Applicants note that any required experimentation is routine to one of skill in the art. The Federal Circuit has repeatedly stated that enablement is not precluded by the necessity for some experimentation and that a considerable amount of experimentation is permissible if it is merely routine or if the specification provides a reasonable

amount of guidance as to how the experimentation should proceed. *In re Wands*, 858 F.2d 731, 737, 8 USPQ2d 1400, 1404 (Fed. Cir. 1988). In the instant case, the quantity of experimentation required to determine peptides that may be used within the claimed lipoproteins amounts to screening for peptides that are from 8 to 500 amino acid residues long and that bind to an Apo B protein receptor. Guidance with respect to such experimentation has been presented in the specification as described above, including description of the Apo B protein receptor binding activity of such peptides, exemplary amino acid sequences for such peptides, particular amino acids associated with such binding activity, and conservative amino acid substitutions that may be made to such sequences while retaining such binding activity (see pages 8 to 12 of the specification). One of skill in the art would appreciate that these techniques are merely routine and the specification provides ample guidance as to how the experimentation should proceed.

With respect to the Examiner's statements regarding the unpredictability of amino acid changes that may be made within the peptide sequences encompassed by the claims while conserving the desired activity, Applicants note that guidance with respect to such substitutions has been provided in the present specification. As described above, ample guidance is provided in the specification with respect to exemplary amino acid sequences for Apo B binding peptides, particular amino acids associated with such binding activity, and conservative amino acid substitutions that may be made to such sequences while retaining such binding activity (see pages 8 to 12 of the specification). Although the degree of predictability in the art is related to the amount of direction or guidance needed in the specification as filed to meet the enablement requirement (see MPEP 2164.05(a)), the Examiner here has not provided any evidence other than her own assertions to doubt the guidance provided in the present disclosure. "[A] specification disclosure which contains a teaching of the manner and process of making and using the invention in terms which correspond in scope to those used in describing and defining the subject matter sought to be patented *must* be taken as in compliance with the enabling requirement of the first paragraph of §112 *unless* there is reason to doubt the objective truth of the statements contained therein which must be relied on for enabling support ... it is incumbent upon the Patent Office ... to back up assertions of its own with acceptable evidence or reasoning

which is inconsistent with the contested statement." *In re Marzocchi*, 439 F.2d 220, 223, 169 USPQ 367, 369 (CCPA 1971) (emphasis in original). Such evidence has not been provided by the Examiner.

Finally, with respect to the Examiner's statements regarding the lack of working examples providing guidance with respect to the genus of peptides encompassed by the claims, Applicants again note that the present claims are directed to non-naturally occurring, receptor competent low density lipoprotein particles, and the provided working examples are directed to how to make and use such lipoprotein particles. In light of the guidance described above in the specification regarding peptides that may be used within the claimed lipoproteins, working examples directed specifically to determining variants of peptides encompassed by the claims is not necessary for enablement. The specification need not contain an example if the invention is otherwise disclosed in such manner that one skilled in the art will be able to practice it without an undue amount of experimentation. *In re Borkowski*, 422 F.2d 904, 164 USPQ 642 (CCPA 1970).

In view of the remarks provided above, Applicants submit that the Examiner's rejection under 35 U.S.C. § 112, first paragraph (enablement), has been overcome and should be withdrawn.

The Rejection of Claims Under 35 U.S.C § 112, Second Paragraph, Should Be Withdrawn

The Examiner has rejected claims 1-2 and 4-15 on the basis that claim 1 lacks clear antecedent basis for the phrase "from 8 to 500 amino acid residues." The Examiner notes that the originally filed claims recited this language and suggested amending the specification to incorporate such support. Applicants have amended the specification as suggested. Accordingly, this rejection has been obviated and should be withdrawn.

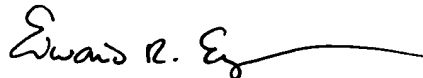
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Amdt. Dated December 7, 2006
Reply to Office Action of August 7, 2006

CONCLUSION

In view of the aforementioned amendment to the specification and remarks, Applicants respectfully submit that the rejections of the claims under 35 U.S.C. §112, First Paragraph (enablement and written description) and Second Paragraph are overcome. Accordingly, the present application is now in condition for allowance. If in the opinion of the Examiner, a telephone conference would expedite the prosecution of the subject application, the Examiner is invited to call the undersigned.

It is not believed that extensions of time or fees for net addition of claims are required, beyond those that may otherwise be provided for in documents accompanying this paper. However, in the event that additional extensions of time are necessary to allow consideration of this paper, such extensions are hereby petitioned under 37 CFR § 1.136(a), and any fee required therefore (including fees for net addition of claims) is hereby authorized to be charged to Deposit Account No. 16-0605.

Respectfully submitted,




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